

ing their stock later this year than formerly. Cattle are in good shape and if sufficient food can be obtained the farmers will be able to keep them through the winter.

*Irrigated lands.*—(Irrigated area in Nebraska for 1913 is about 300,000 acres, nearly all of which lies within the southwestern and western portions.) Where sufficient water supply has been available fair to good crops have been grown.

*Water supply.*—Practically all the streams in this section of the State carry what is known as the "underflow." The water supply has, therefore, been affected only to the extent that the water table has been lowered from 1 to 3 feet according to the locality. There has been no report of wells going dry, and the supply has been such that there was no scarcity of water.

No especial inconvenience resulted to human life from the hot weather and there were no prostrations or deaths from extreme heat reported in this vicinity.

#### DROUGHT IN OKLAHOMA, JULY AND AUGUST, 1913.

By J. P. SLAUGHTER, Section Director.

Weather conditions were favorable during the spring and early summer, ending with general and copious rains June 30 and July 1 over nearly the whole State. Up to the middle of July the condition of all crops was excellent, but by the close of the month nearly the whole State was facing a serious drought and conditions grew steadily worse until the general rains of September 8-9.

There were no general rains from July 3 to September 7, such local showers as occurred being widely scattered and light. The injurious effects of the failure of the usual summer rains were augmented by clear skies, unusually high day temperatures and occasional hot, drying winds. Intense heat was practically continuous from July 4 to August 7. There were but two short periods of seasonable day temperatures, July 20-22 and August 22-24, and in each instance barely normal conditions were reached. The nights were reasonably cool and pleasant during this entire period and there was no material suffering by man or beast as a direct result of the heat.

For the 68-day period July 2 to September 7 the total rainfall at Oklahoma City was 0.57 inch, as compared with a normal of 7.33 inches. The mean temperature for July was 81.7° and the average daily maximums 92.6°; for August the mean was 84.8° and the average of the daily maximums 97.6°.

For the State the rainfall for the 60-day period July 2 to August 31 averaged 1.63 inches, as compared with a normal of 5.85 inches. The average temperatures for July and August were 83.8° and 85.5°, respectively, while the averages of the daily maximums were 97.3° and 101.3°, respectively. The figures for the August State mean temperature have been exceeded twice, August, 1899, and July, 1901. The August average of the daily maximums is the highest of record, exceeding the average of July, 1901, by nearly 1°. Summing up, it may be said that the temperature extremes experienced this summer are equaled nearly every year and have been exceeded several years, but for duration of intensely hot weather July and August of this year establish a new record for Oklahoma.

The drought cut the condition of crops on an average close to 50 per cent. The ultimate result, however, on crop yields is still a question of doubt and depends largely on the date of killing frost and the intervening weather conditions. It is estimated at this writing, September 16, that the loss will not be so large as the above figures indicate. Cotton will suffer most heavily and the per acre yield will almost certainly be the lowest in the history of the State. Early planted corn matured with but slight injury or loss; late planted corn is largely a total loss and the same may be said of a considerable portion of the late planted kafir, milo maize, and broom corn, large acreages having "fired." The alfalfa crop will be short one cutting; the last cutting will be light and the stand has been materially damaged in some localities. Feterita, introduced in recent years, stood the drought and will make good yields.

The Cimarron, North Canadian, and South Canadian Rivers were dry during August; in many places sand and dust were blowing along the river beds. The smaller streams and many springs and shallow wells failed, and there was a serious shortage of water for both stock and domestic purposes, more especially in the western half of the State. Some of the cities and towns were using water sparingly and were face to face with a genuine water famine when the September rains came. Farmers were impelled to market large numbers of cattle and hogs because of scarcity of water, failure of pastures, and the anticipated shortage of feed, but there was no loss of stock because of lack of water.

The drought emphasized the necessity of the farmers of Oklahoma adopting the methods advised by the farm demonstrators of the Agricultural Department, and the State. In numerous instances that came under the writer's personal observation only a barbed wire fence separated a green and fairly thrifty field of kafir or corn from one that was burned and dead; the difference in the two fields was due solely to preparation of the seed beds and the methods of cultivation.

The most disastrous drought in the history of the State was that of 1895 and was due to the failure of rains in the fall of 1894 and the winter, spring, and early summer of 1895. There was no unusually hot weather that year and precipitation was abundant in July, August, and September. In 1901 conditions as regards temperature were much the same as this year, except that the period of intense heat began the latter part of June and ended during the first decade in August. The rainfall was deficient from June 20 to September 30, but averaged nearly twice as much as during the drought of this year. Precipitation was deficient during the spring and summer of 1910 and the season generally droughty, but there were no protracted periods of intense heat that year. In 1911 the May and June precipitation was light and during practically the whole month of June and the first 10 days of July temperatures were abnormally high; the mean temperature for the State for June was 84.4°, or 8.6° above normal; the average of the daily maximums was 99.1°, with the extremes ranging between 105° and 112°. Grain was greatly damaged that year, but abundant rains and seasonable temperatures in the late summer and early fall saved the cotton and forage crops.

While the recent drought has greatly damaged crops, the consensus of opinion of the best posted men in Oklahoma is that in the aggregate the crop yield for the State this year will certainly equal that of 1910 or 1911.